

# Database

Underwater archaeological resources

The island that broke the ocean's surface  
and what was left behind

Underwater cultural heritage management in Aruba

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MA Applied Archaeology, Maritime and Underwater Archaeology

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Final version

Malmok Salina (1500 BC – 1515 AD)	
<b>Type</b>	Site
<b>Location</b>	Malmok Salina
<b>Period</b>	Archaic period/ Ceramic period 1500 BC – 1515 AD
<b>Variety</b>	Activity site
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	Surveyed
<b>History</b>	
<p>The habitation period of Aruba began 3500 years ago when the first Amerindians migrated from (presumably) Venezuela to Aruba during the Archaic period (1500 BC – 900/1000 AD) (Dijkhoff and Linville, 2004, p. 5; Kelly and Hofman, 2019, p. 155). The Amerindians survived by exploiting the resources on the island with a high consumption and dependency on marine foods, namely shellfish, fish, sea, turtles and their eggs, herbs, seeds, snails, and small game. These individuals led semi-nomadic lifestyles in small groups up to 15 people, and preferred to stay relatively close to the coast or inner water ways (Boerstra 1982; Dijkhoff and Linville, 2004, p. 5; Kelly and Hofman, 2019, p. 148).</p> <p>The coastlines on the leeward side of the island was preferred based on the Archaic period sites found on the island (Kelly and Hofman, 2019, p. 149). The region of Malmok was a site that was exploited for a long time. Malmok was used for different activities, namely (temporary) settlements, catchments areas for the exploitation of marine resources where shell middens were left behind, and as a cemetery (Versteeg <i>et al.</i>, 1990).</p>	
<b>Description</b>	
<p>Two activity sites dating back to the period of the first Amerindians are situated on a limestone surface alongside the and partially within the Malmok salina. The activity sites are documented as Malmok 3 and Malmok 5. Malmok 3 contains large distributions of (complete) shells, and Malmok 5 contains dense distributions of fragmented shells, stones, and pottery. The archaeological remains located within the Malmok 3 site are partially submerged for a majority of the year, and the remains at the Malmok 5 site become submerged during the heavy rain season.</p>	

<b>Status</b>
The archaeological remains situated within the salina are undergoing rain and wind erosion.
<b>References</b>
<ul style="list-style-type: none"> <li>▪ Boerstra, E. H. J. (1976). <i>De Precolumbiaanse Bewoners van Aruba, Curacou en Bonaire</i>. Walburg Press.</li> <li>▪ Dijkhoff, R. A. C. F., Linville, M. S. (2004). Aruba, "Island of shells". In R. A. C. F. Dijkhoff and M. Linville (Eds), <i>The Archaeology of Aruba: The marine shell heritage</i> (pp. 1-8). The Archaeological Museum of Aruba.</li> <li>▪ Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.</li> <li>▪ Kelly, H., Hofman, C. L. (2019). The Archaic Age of Aruba: New evidence on the first migrations to the island. In C. L. Hofman and A. T. Antczak (Eds), <i>Early settlers of the insular Caribbean. Dearchaizing the Archaic</i> (pp. 147 – 162). Sidestone Press.</li> <li>▪ Versteeg, A. H., Tacoma, J., van de Velde, P. (1990). <i>Archaeological investigations on Aruba: The Malmok cemetery</i>. Intern Rapport Archaeological Museum Aruba.</li> </ul>

## Photographs



Malmok 4 (1500 BC – 900/1000 AD)	
<b>Type</b>	Site
<b>Location</b>	Malmok
<b>Period</b>	Archaic period – Ceramic period 1500 BC – 1515 AD
<b>Variety</b>	Activity site
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	Surveyed
<b>History</b>	
<p>The habitation period of Aruba began 3500 years ago when the first Amerindians migrated from (presumably) Venezuela to Aruba during the Archaic period (1500 BC – 900/1000 AD) (Dijkhoff and Linville, 2004, p. 5; Kelly and Hofman, 2019, p. 155). The Amerindians survived by exploiting the resources on the island with a high consumption and dependency on marine foods, namely shellfish, fish, sea, turtles and their eggs, herbs, seeds, snails, and small game. These individuals led semi-nomadic lifestyles in small groups up to 15 people, and preferred to stay relatively close to the coast or inner water ways (Boerstra 1982; Dijkhoff and Linville, 2004, p. 5; Kelly and Hofman, 2019, p. 148).</p> <p>The coastlines on the leeward side of the island was preferred based on the Archaic period sites found on the island (Kelly and Hofman, 2019, p. 149). The region of Malmok was a site that was exploited for a long time. Malmok was used for different activities, namely (temporary) settlements, catchments areas for the exploitation of marine resources where shell middens were left behind, and as a cemetery (Versteeg <i>et al.</i>, 1990).</p>	
<b>Description</b>	
<p>This activity site dating back to the first Amerindians is situated on sand distributed on a limestone surface in close proximity to the ocean. The activity site contains a lot of shells (completed and fragmented shells), corals, stones, and pottery. This activity site was not dated and therefore it cannot be said with certainty whether the site dates back to the Archaic or Ceramic period. However, the pottery is similar to pottery found in Dabajuran settlements, which date back to the Ceramic period.</p>	

<b>Status</b>
Natural threat factors are causing the activity site to undergo weathering from rain, coastal, and wind erosion in which parts of the activity site are now falling into the ocean.
<b>References</b>
<ul style="list-style-type: none"> <li>▪ Boerstra, E. H. J. (1976). <i>De Precolumbiaanse Bewoners van Aruba, Curacou en Bonaire</i>. Walburg Press.</li> <li>▪ Dijkhoff, R. A. C. F., Linville, M. S. (2004). Aruba, “Island of shells”. In R. A. C. F. Dijkhoff and M. Linville (Eds), <i>The Archaeology of Aruba: The marine shell heritage</i> (pp. 1-8). The Archaeological Museum of Aruba.</li> <li>▪ Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.</li> <li>▪ Kelly, H., Hofman, C. L. (2019). The Archaic Age of Aruba: New evidence on the first migrations to the island. In C. L. Hofman and A. T. Antczak (Eds), <i>Early settlers of the insular Caribbean. Dearchaizing the Archaic</i> (pp. 147 – 162). Sidestone Press.</li> <li>▪ Versteeg, A. H., Tacoma, J., van de Velde, P. (1990). <i>Archaeological investigations on Aruba: The Malmok cemetery</i>. Intern Rapport Archaeological Museum Aruba.</li> </ul>



## Photographs



Arashi 2 (380 – 204 BC)	
<b>Type</b>	Site
<b>Location</b>	Arashi
<b>Period</b>	Archaic period 380 – 204 BC
<b>Variety</b>	Activity site
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	Surveyed
<b>History</b>	
<p>The habitation period of Aruba began 3500 years ago when the first Amerindians migrated from (presumably) Venezuela to Aruba during the Archaic period (1500 BC – 900/1000 AD) (Dijkhoff and Linville, 2004, p. 5; Kelly and Hofman, 2019, p. 155). The Amerindians survived by exploiting the resources on the island with a high consumption and dependency on marine foods, namely shellfish, fish, sea, turtles and their eggs, herbs, seeds, snails, and small game. These individuals led semi-nomadic lifestyles in small groups up to 15 people, and preferred to stay relatively close to the coast or inner water ways (Boerstra 1982; Dijkhoff and Linville, 2004, p. 5; Kelly and Hofman, 2019, p. 148).</p> <p>The coastlines on the leeward side of the island was preferred based on the Archaic period sites found on the island (Kelly and Hofman, 2019, p. 149).</p>	
<b>Description</b>	
<p>This (temporary) activity site is situated on a diorite covered limestone and contains shell materials, pottery, corals, and stones. The site itself is situated between 1 – 25 meters from the ocean.</p>	
<b>Status</b>	
<p>Natural threat factors are causing the activity site to undergo weathering from rain, coastal, and wind erosion in which parts of the activity site are now falling into the ocean.</p>	



## References

- Boerstra, E. H. J. (1976). *De Precolumbiaanse Bewoners van Aruba, Curacou en Bonaire*. Walburg Press.
- Dijkhoff, R. A. C. F., Linville, M. S. (2004). Aruba, “Island of shells”. In R. A. C. F. Dijkhoff and M. Linville (Eds), *The Archaeology of Aruba: The marine shell heritage* (pp. 1-8). The Archaeological Museum of Aruba.
- Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.
- Kelly, H., Hofman, C. L. (2019). The Archaic Age of Aruba: New evidence on the first migrations to the island. In C. L. Hofman and A. T. Antczak (Eds), *Early settlers of the insular Caribbean. Dearchaizing the Archaic* (pp. 147 – 162). Sidestone Press.

## Photographs



Arashi 5 (1500 BC – 900/1000 AD)	
<b>Type</b>	Site
<b>Location</b>	Arashi
<b>Period</b>	Archaic period 1500 BC – 900/1000 AD
<b>Variety</b>	Activity site
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	Surveyed
<b>History</b>	
<p>The first Amerindians migrated from (presumably) Venezuela to Aruba circa 3500 years ago, and this period is known as the Archaic period (1500 BC – 900/1000 AD) (Dijkhoff and Linville, 2004, p. 5; Kelly and Hofman, 2019, p. 155). The Amerindians survived by exploiting the resources on the island with a high consumption and dependency on marine foods, namely shellfish, fish, sea, turtles and their eggs, herbs, seeds, snails, and small game. These individuals led semi-nomadic lifestyles in small groups up to 15 people, and preferred to stay relatively close to the coast or inner water ways (Boerstra 1982; Dijkhoff and Linville, 2004, p. 5; Kelly and Hofman, 2019, p. 148).</p> <p>The coastlines on the leeward side of the island was preferred based on the Archaic period sites found on the island (Kelly and Hofman, 2019, p. 149).</p>	
<b>Description</b>	
<p>This (temporary) activity site is situated within the gully of Arashi at a distance of 25 meters from the ocean, and is considered to be the last known pre-Columbian location containing an “untouched” shell midden on the island. The flora and fauna present within the environment provided a natural protection in addition to the flooding of the gully during the rainy season submerging the lower layers of the shell midden. The site contains shells, pottery, corals, and stones.</p>	
<b>Status</b>	
<p>Natural threat factors are causing the activity site to undergo weathering from rain and wind erosion. Mechanical threat factors, namely hurricanes and tropical storms causes heavy surf conditions and flooding which causes damage or misplaces the archaeological materials present within the gully from their original position.</p>	

## References

- Boerstra, E. H. J. (1976). *De Precolumbiaanse Bewoners van Aruba, Curacou en Bonaire*. Walburg Press.
- Dijkhoff, R. A. C. F., Linville, M. S. (2004). Aruba, “Island of shells”. In R. A. C. F. Dijkhoff and M. Linville (Eds), *The Archaeology of Aruba: The marine shell heritage* (pp. 1-8). The Archaeological Museum of Aruba.
- Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.
- Kelly, H., Hofman, C. L. (2019). The Archaic Age of Aruba: New evidence on the first migrations to the island. In C. L. Hofman and A. T. Antczak (Eds), *Early settlers of the insular Caribbean. Dearchaizing the Archaic* (pp. 147 – 162). Sidestone Press.

## Photographs



Palm Beach 1 (1500 BC – 900/1000 AD)	
<b>Type</b>	Site
<b>Location</b>	Palm Beach
<b>Period</b>	Ceramic period 900/1000 AD – 1515 AD
<b>Variety</b>	Activity site
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	Surveyed
<b>History</b>	
<p>The Ceramic period entailed the migration of a new group of Amerindians, namely the Dabajuran or Caquetio people. These Amerindians lived in a more permanent setting and created three primary villages located at Tanki Flip, Santa Cruz, and Savaneta. Two smaller villages were located at Tanki Lender and Parkietenbos with a third possible settlement in Oranjestad (Dijkhoff and Linville, 2004, p. 5-6; Dijkhoff <i>et al.</i>, 2010). However, the entire island was still exploited for its terrestrial and marine resources. The people consumed fruits, turtles and their eggs, iguanas, birds, small mammals, fish, and shellfish. The settlements and surrounding areas, including coastlines, contained what is called “catchment areas” that formed part of a larger network to collect shellfish and fish (Dijkhoff and Linville, 2004, p. 6; Kelly, 2012, p. 54).</p> <p>The Dabajuran/Caquetios continued to use the locations that were used by the Amerindians during the Archaic period, namely the western coastlines. The coastlines of Palm Beach was easily accessible for the Amerindians and was therefore an attractive location to exploit the marine resources.</p>	
<b>Description</b>	
This (temporary) activity site is situated on a sand covered limestone with a thick distribution of shells, stones, corals, and pottery.	
<b>Status</b>	
Natural threat factors are causing the activity site to undergo weathering from rain, coastal, and wind erosion in which parts of the activity site are now falling into the ocean.	

## References

- Dijkhoff, R. A. C. F., Linville, M. S. (2004). Aruba, "Island of shells". In R. A. C. F. Dijkhoff and M. Linville (Eds), *The Archaeology of Aruba: The marine shell heritage* (pp. 1-8). The Archaeological Museum of Aruba.
- Dijkhoff, R. A. C. F., Kelly, H. J., Croes, F., Angela, G. H. (2010). *Preliminary Report of the Artifacts of Old Oranjestad Found on the 22<sup>nd</sup> and 23<sup>rd</sup> of February 2010*. Intern Rapport 21, National Archaeological Museum Aruba.
- Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.
- Kelly, H. (2012). Socio economic ties between Aruba and La Guajira since the Pre-Colombian period. *Revista Jangwa Pana* 11, 49-63.



## Photographs



Palm Beach 3 (900/1000 – 1515 AD)	
<b>Type</b>	Site
<b>Location</b>	Palm Beach
<b>Period</b>	Ceramic period 900/1000 – 1515 AD
<b>Variety</b>	Activity site
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	Surveyed
<b>History</b>	
<p>During the Ceramic period, a new group of Amerindians began migrating to the island, namely the Dabajuran or Caquetio people. These Amerindians settled in multiple permanent villages, with three primary villages. Three primary villages were located in Tanki Flip, Santa Cruz, and Savaneta. Two additional and smaller villages were situated at Tanki Lender and Parkietenbos with a third potential settlement in Oranjestad (Dijkhoff and Linville, 2004, p. 5-6; Dijkhoff <i>et al.</i>, 2010). However, the entire island was still exploited in order to gather resources for consumption. These Amerindians consumed fruits, turtles and their eggs, iguanas, birds, small mammals, fish, and shellfish. The settlements and surrounding areas, including coastlines, contained what is called “catchment areas” that formed part of a larger network to collect shellfish and fish (Dijkhoff and Linville, 2004, p. 6; Kelly, 2012, p. 54).</p> <p>The Dabajuran/Caquetios continued to use the locations that were used by the Amerindians during the Archaic period, namely the western coastlines. The coastlines of Palm Beach was easily accessible for the Amerindians and was therefore an attractive location to exploit the marine resources.</p>	
<b>Description</b>	
This (temporary) activity site is located on a sand covered limestone with a dense distribution of shells, stones, corals, and potter	
<b>Status</b>	
Natural threat factors are causing the activity site to undergo weathering from rain, coastal, and wind erosion in which parts of the activity site are now falling into the ocean.	



## References

- Dijkhoff, R. A. C. F., Linville, M. S. (2004). Aruba, "Island of shells". In R. A. C. F. Dijkhoff and M. Linville (Eds), *The Archaeology of Aruba: The marine shell heritage* (pp. 1-8). The Archaeological Museum of Aruba.
- Dijkhoff, R. A. C. F., Kelly, H. J., Croes, F., Angela, G. H. (2010). *Preliminary Report of the Artifacts of Old Oranjestad Found on the 22<sup>nd</sup> and 23<sup>rd</sup> of February 2010*. Intern Rapport 21, National Archaeological Museum Aruba.
- Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.
- Kelly, H. (2012). Socio economic ties between Aruba and La Guajira since the Pre-Colombian period. *Revista Jangwa Pana* 11, 49-63.

## Photographs



Mangel Halto (900/1000 – 1515 AD)	
<b>Type</b>	Site
<b>Location</b>	Mangel Halto
<b>Period</b>	Ceramic period 900/1000 AD – 1515 AD
<b>Variety</b>	Activity site
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	Surveyed
<b>History</b>	
<p>As time went on during the habitation history of Aruba, a new group of Amerindians began migrating to the island, namely the Dabajuran or Caquetio people. These Amerindians settled in multiple permanent villages, with three primary villages. Three primary villages were located in Tanki Flip, Santa Cruz, and Savaneta. Two additional and smaller villages were situated at Tanki Lender and Parkietenbos with a third potential settlement in Oranjestad (Dijkhoff and Linville, 2004, p. 5-6; Dijkhoff <i>et al.</i>, 2010). However, the entire island was still utilized in order to gather resources for consumption. These Amerindians consumed fruits, turtles and their eggs, iguanas, birds, small mammals, fish, and shellfish. The settlements and surrounding areas, including coastlines, contained what is called “catchment areas” that formed part of a larger network to collect shellfish and fish (Dijkhoff and Linville, 2004, p. 6; Kelly, 2012, p. 54).</p> <p>Mangel Halto is situated west of one of the primary villages, namely at Savaneta. In addition, the beaches at Mangel Halto has an easily accessible coastline which rises and fall with the tides making it easy to fish and collect shellfish.</p>	
<b>Description</b>	
This (temporary) activity site is located on a sand covered limestone containing a dense distribution of shells, both fragmented and complete shells, corals, pottery, and stones.	
<b>Status</b>	
Natural threat factors are causing the activity site to undergo weathering from rain, coastal, and wind erosion in which parts of the activity site are now falling into the ocean. In addition, a large section of this site was covered with cement.	

## References

- Dijkhoff, R. A. C. F., Linville, M. S. (2004). Aruba, "Island of shells". In R. A. C. F. Dijkhoff and M. Linville (Eds), *The Archaeology of Aruba: The marine shell heritage* (pp. 1-8). The Archaeological Museum of Aruba.
- Dijkhoff, R. A. C. F., Kelly, H. J., Croes, F., Angela, G. H. (2010). *Preliminary Report of the Artifacts of Old Oranjestad Found on the 22<sup>nd</sup> and 23<sup>rd</sup> of February 2010*. Intern Rapport 21, National Archaeological Museum Aruba.
- Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.
- Kelly, H. (2012). Socio economic ties between Aruba and La Guajira since the Pre-Colombian period. *Revista Jangwa Pana* 11, 49-63.

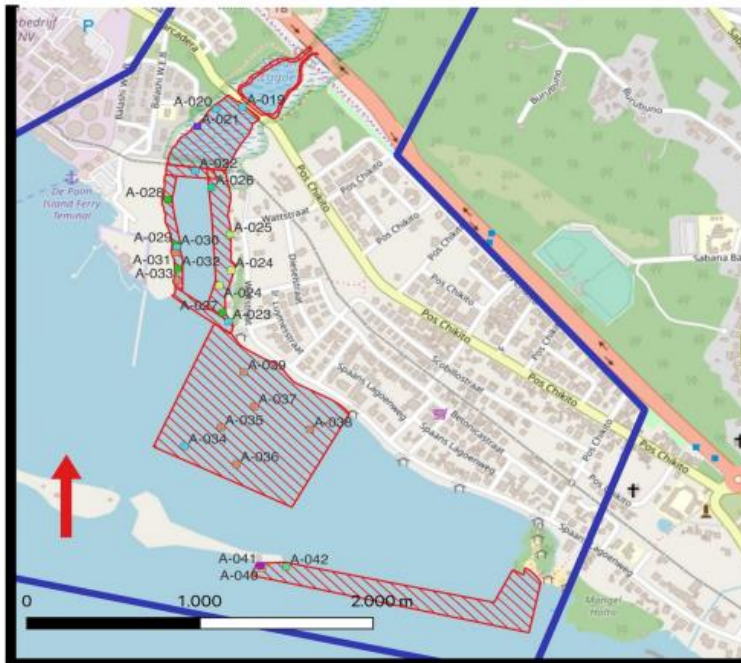
## Photographs



Spaans Lagoen (17 <sup>th</sup> century+)	
<b>Type</b>	Harbor
<b>Location</b>	Spaans Lagoen
<b>Period</b>	Historic period – Dutch West India Company – Industrial period 17th century onwards
<b>Variety</b>	Anchorage/Harbor
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	Surveyed
<b>History</b>	
<p>Spaans Lagoen was a beneficial location for habitation and exploitation since the beginning of the habitation period circa 3500 years ago. A total of seven Archaic period sites were found and documented along the western banks of the lagoon (Kelly and Hofman, 2019). The Amerindians made use of Spaans Lagoen up until the Historic period. During the 17<sup>th</sup> century, a battle took place between the Amerindians and French pirates as they tried to invade the island (Hartog, 1953). As time went on, this region was used to build a gold smelter, as it had a good connection to the ocean (Alofs and Merckies, 2001, p. 29).</p> <p>A survey and dive inspections were conducted in 2021 where a total of 12 sites containing archaeological artefacts were documented. The archaeological artefacts were namely, constructing materials, fishing traps, shipwrecks, floating platforms, anchors, industrial materials, cannons, petrified wood, and a large abundance of bottles.</p>	

## Description

The underwater archaeological remains were found at the end of the inner waterway and the surrounding harbor outside the inner water way.



### Legend

Research Area	Cannon	Military
Dive Inspections	Car wreck	Platform
Interpretation	Construction material	Propeller
Anchor	Fishing	Shipwreck
Ballast Stone	Harbor Buoy	Wood
Bottles	Industrial material	

## Status

The metal artefacts are covered in coral and marine growth in addition to undergoing a continuous deterioration in the form of metal erosion. In addition, the materials are situated on the sea floor and are therefore impacted through hurricane and tropical storm activities which causes rough ocean conditions and flooding.



## References

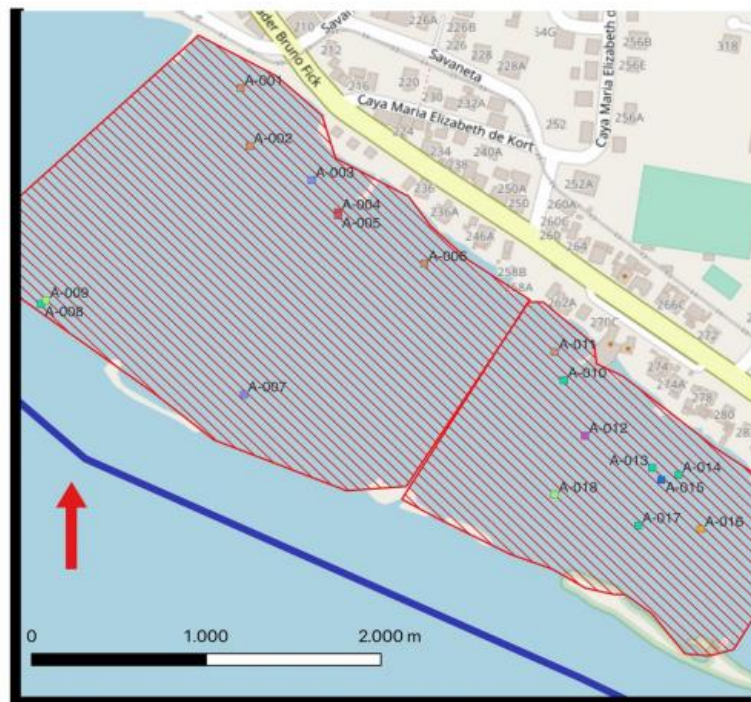
- Alofs, L., Merckies, L. (2001). *Ken ta Arubiano? Sociale integratie en natievorming op Aruba, 1924-2001*. VAD/De Wit Stores.
- Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.
- Hartog, J. (1953). *Aruba zoals het was, zoals het werd*. De Wit.
- Kelly, H., Hofman, C. L. (2019). The Archaic Age of Aruba: New evidence on the first migrations to the island. In C. L. Hofman and A. T. Antczak (Eds), *Early settlers of the insular Caribbean. Dearchaizing the Archaic* (pp. 147-162). Sidestone Press.
- Symister, C. M. A., Dijkhoff, R. A. C. F. (2022). *Spaans Lagoen and Commandeursbaai. An archaeological field evaluation on Maritime Heritage of Aruba* [Published report]. Symister Maritime Archaeological Research.

## Photographs



Commandeursbaai (19 <sup>th</sup> and 20 <sup>th</sup> centuries)	
<b>Type</b>	Harbor
<b>Location</b>	Savaneta
<b>Period</b>	Historic period – Colonial and Industrial period 19 <sup>th</sup> – 20 <sup>th</sup> century
<b>Variety</b>	Anchorage/Harbor
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	Surveyed
<b>History</b>	
<p>The Commandeursbaai is the sea and ay situated in front of what is now known as Savaneta and Zeewijk. The bay is surrounded by reef islands in turn creating a natural harbor that was used by the Spanish and Dutch as Aruba’s main harbor from the 16<sup>th</sup> to mid-18<sup>th</sup> century. Two surveys were conducted in the waters between the reef island and the coast in 2000 and 2021. The artefacts found during the 2000 survey were namely bottles that were lifted and now resides within the National Archaeological Museum of Aruba, in addition to home-made pope anchors and ballast stones that were left in situ. The materials date back to between 1800 – 1950.</p> <p>The 2021 survey and dive inspections yielded a total of 15 locations containing archaeological artefacts. The artefacts were bottles, fishing and harbor materials, anchors, shipwrecks, propellers, ballast stones, cannons, military and industrial/construction materials, car wrecks, and perishable wood. The materials found date between the 19<sup>th</sup> and 20<sup>th</sup> century.</p>	

## Description



### Legend

Research Area	Cannon	Military
Dive Inspections	Car wreck	Platform
Interpretation	Construction material	Propeller
Anchor	Fishing	Shipwreck
Ballast Stone	Harbor Buoy	Wood
Bottles	Industrial material	

## Status

The metal artefacts are covered in coral and marine growth in addition to undergoing a continuous deterioration in the form of metal erosion. In addition, the materials are situated on the sea floor and are therefore impacted through hurricane and tropical storm activities which causes rough ocean conditions and flooding.

## References

- Angela, H. (2001). *Verslag: Onderwater survey, Commandeursbaai*. Verslag Wetenschappelijke Afdeling Archeologisch Museum, Aruba.
- Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.
- Symister, C. M. A., Dijkhoff, R. A. C. F. (2022). *Spaans Lagoen and Commandeursbaai. An archaeological field evaluation on Maritime Heritage of Aruba* [Published report]. Symister Maritime Archaeological Research.

## Photographs

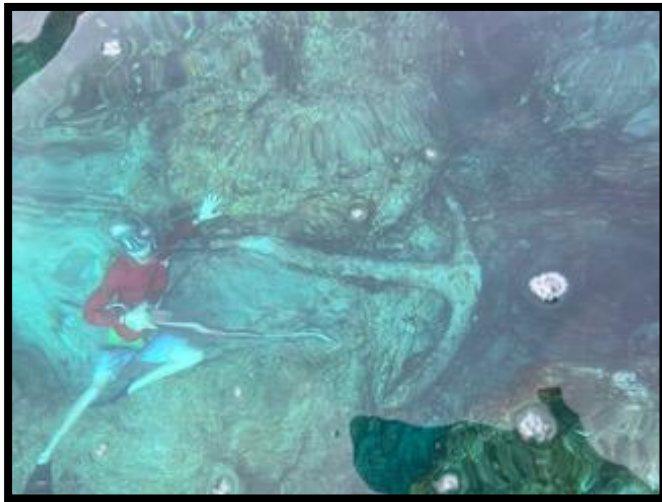
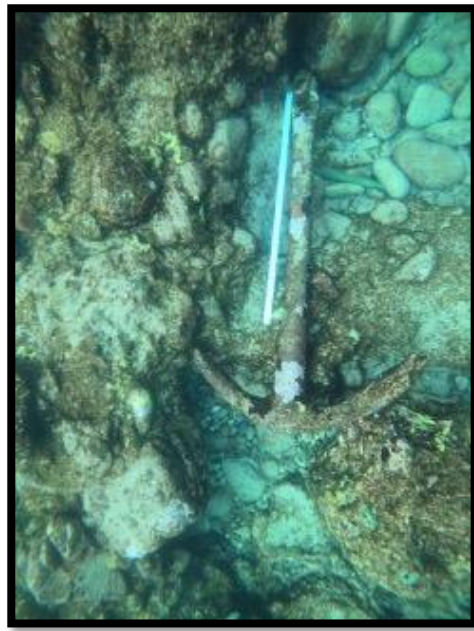


Shipwreck (20 <sup>th</sup> century)	
<b>Type</b>	Shipwreck
<b>Location</b>	Sero Colorado
<b>Period</b>	Historic period – Industrial period 20 <sup>th</sup> century
<b>Variety</b>	Yacht or military ship
<b>Status</b>	In situ Salvaged
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	None
<b>History</b>	
<p>Multiple artefacts were discovered at the Natural Bridge located at the eastern top of Aruba situated at Sero Colorado. This site is situated in a difficult location due to its spot on the windward side of the island near the rocky coastline. Under normal conditions, the rocky coastlines are continuously hit by two meter waves. A heavy sheep's rudder and three hanging knees were found north of the cave. These are connecting pieces between link parts that create an angle, which are typically used on wooden ships, namely where the frames are connected to the hull frames. The first anchor was found a little further away, followed by a second anchor portraying similar sizes and types. Next to the anchors, situated under a rock were a porthole and two hollow cylinders. However, the purpose of these artifacts could not be determined. However, under that same rock was the heat exchanger which functions as the cooling system for the ship engine. In addition, a shaft with fine threads and a shut-off valve was located among the artifacts. Bronze nails were present, which connected the ship's planks to the hull frames. All the found artifacts were situated at a distance of five meters from the shore in a depth of two to three meters. The day after the discovery, the rudder was lifted, in addition to seven smaller individual finds. Based on the distribution of the artifacts found, it is speculated that the ship collided with the shore first before settling on the sea floor. The type of ship was not determined. However, based on the type and quality of materials found, it is speculated that this could have been a luxury yacht or a military boat.</p>	

<b>Description</b>
<p>Location: 12°25'16.21"N 69°52'3.82"W</p> <p>The three anchors measured between 2 – 3 meters in length.</p>
<b>Status</b>
<p>The metal objects are undergoing continuous metal erosion, in addition to being situated in a region with heavy surf conditions which can become even rougher during hurricanes or tropical storm activities that can relocate archaeological artefacts.</p>
<b>References</b>
<ul style="list-style-type: none"> <li>▪ Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.</li> <li>▪ Hagedoorn, A. (2023). Propeller en Artefacten te Sero Colorado. <i>UCH Rapport vondsmelding</i>.</li> </ul>



## Photographs



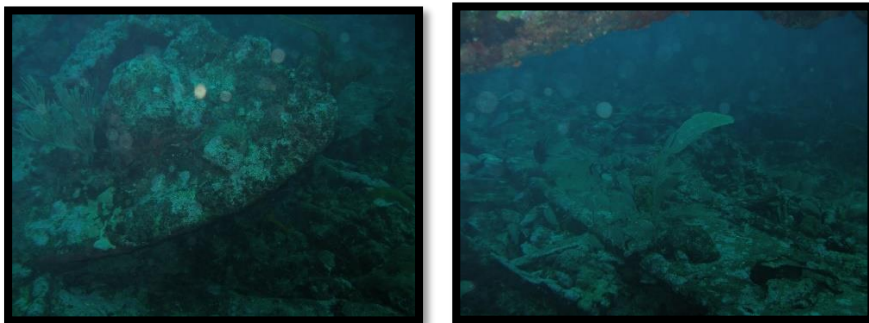


The Californian (1891)	
<b>Type</b>	Shipwreck
<b>Location</b>	Northern point
<b>Period</b>	Historic period – Colonial period 1891
<b>Variety</b>	English steamship
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	None
<b>History</b>	
<p>The Californian was an English steamship that smashed to pieces at the north point of Aruba on September 23<sup>rd</sup> 1891 due to a lack of light and warning generated by a lighthouse (Nooyen, 1968). The Californian was sailing from Middle-America with a ship full of cargo when it stranded. One person died during the wrecking and a majority of the goods on board were sold. The steamship itself broke in two and was declared a loss. The ship now resides at a depth of 17 meters in front of the Hudishibana dunes (Hot Dive; Shipping gazette &amp; Lloyd's list, 1891).</p>	
<b>Description</b>	
<p>Location: 12°36.993'N 70°02.137W</p>	
<b>Status</b>	
<p>Based on the location, the depth, and the material of the ship, it is undergoing a continuous mechanical threat factors, namely hurricanes and tropical storm activities, biological and chemical deterioration, in addition to possible looting/treasure hunting by experienced divers or fishing damage from the fishing methods, namely anchoring on the boat itself.</p>	

## References

- Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.
- Hot Dives: <http://www.hotdive.com/en/divemap,c153,ds1048,map,Dive-spot,wreck,California-Wreck,Netherlands-Antilles.html>.
- Nooyen, R. H. (1968). Vuurtoren California. *Amigoe di Aruba* 1969, n.p
- Shipping Gazette and Lloyd's list. (1891a). *Shipping gazette and Lloyd's list*. Weekly summary September 18;595, London, England.
- Shipping Gazette and Lloyd's list. (1891b). *Shipping gazette Shipping gazette and Lloyd's list*. September 25;611, London, England.
- Shipping Gazette and Lloyd's list. (1891c). *Shipping gazette Shipping gazette and Lloyd's list*. October 2;627, London, England.
- Shipping Gazette and Lloyd's list. (1891d). *Shipping gazette Shipping gazette and Lloyd's list*. October 23;678, London, England.

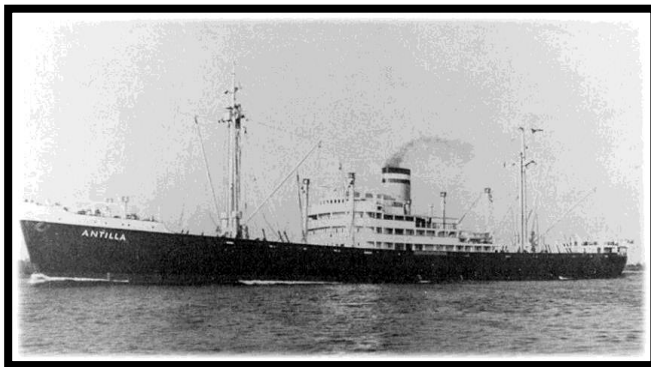
## Photographs



ES Antilla (1940)	
<b>Type</b>	Shipwreck
<b>Location</b>	Malmok
<b>Period</b>	Historical period – Industrial period 1939 – 1940
<b>Variety</b>	Cargo liner
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	None
<b>History</b>	
<p>The ES Antilla was built in 1939 as a trading vessel between Germany and the Caribbean. However, as World War II began, the Netherlands feared it would be invaded and ordered the crew of the ES Antilla, at that moment anchored at Aruba, to remain on board. Afterwards the Dutch government ordered the seize of all German ships situated within the Dutch Antilles. The German crew retaliated by scuttling the ship and set it ablaze. The Dutch marines subsequently boarded the ship and escorted the crew ashore and delivered them into the custody of the Royal Mare Chaussee. After the crew were removed from the burning ship, two rounds were fired from a 37 mm gun at the ES Antilla, and it ultimately sank due to the fire. The ES Antilla is considered to be one of the Caribbeans largest shipwreck (SS Antilla 1939). The ES Antilla now resides in Malmok Bay in 18 meters of water. However, a part of the starboard is situated above the surface. A storm that passed near the island in 1953 caused damage to the wreck, but the island is still colonized by corals and tube sponges which in turn attract marine organisms (Wrecksite; Deeper blue).</p> <p>Multiple dive inspections were done to locate and lift one of ES Antilla's anchors and eventually one was found. However, it was not salvaged as it was completely covered in concretions and houses marine organisms. Another anchor was found later on and this was salvaged to use as a monument (Lago Oil &amp; Transport co. Ltd.)</p>	

<b>Description</b>	
Name: ES Antilla	People on board: 35
Type: Cargo liner	Speed: 15 knots – 28 km/h
Owner: Private	Length: 121.4 meters
Master: Ferdinand Schmidt	Draft: 6.9 meters
Nationality: Germany	Beam: 17 meters
Aliases: SS Antilla	Tonnage: 4363 tons
<b>Status</b>	
<p>The ES Antilla are susceptible to mechanical, biological, chemical, and human threat factors. Hurricanes and tropical storms are causing the displacement of archaeological remains and weakening of the coral reefs present on the ship. Wood materials are present at the sight which in turn are undergoing biological deterioration while a majority of the ship itself is in a continuous state of metal erosion. As last, human activities are causing significant damage through fishing, more specifically the fishing methods used are to directly anchor their fishing vessels to the shipwreck itself. This causes parts of the shipwreck to break off. In addition, the ES Antilla is a popular dive site, in turn making it susceptible to looting and treasure hunting.</p>	
<b>References</b>	
<ul style="list-style-type: none"> <li>▪ Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.</li> <li>▪ SS Antilla 1939: <a href="#">SS Antilla (1939) - Wikipedia.</a></li> <li>▪ Lago Oil &amp; Transport co. Ltd.: <a href="https://lago-colony.com/">https://lago-colony.com/</a>.</li> <li>▪ Wrecksite: <a href="https://www.wrecksite.eu/">https://www.wrecksite.eu/</a>.</li> <li>▪ Deeper blue: <a href="https://www.deeperblue.com/">https://www.deeperblue.com/</a>.</li> </ul>	

## Photographs

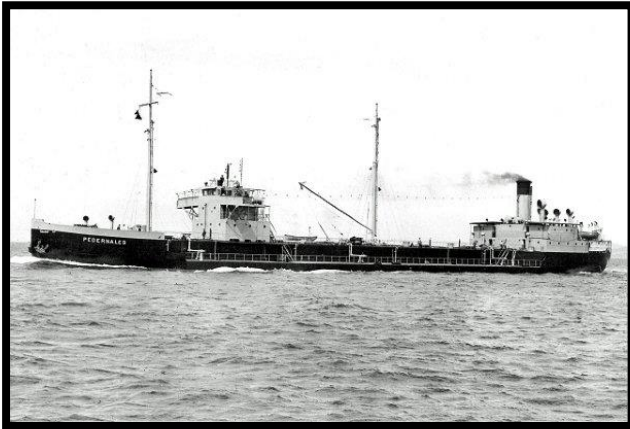


SS Pedernales (1942)	
<b>Type</b>	Shipwreck
<b>Location</b>	Palm Beach
<b>Period</b>	Historic period – Industrial period 1942
<b>Variety</b>	British oil tanker
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	None
<b>History</b>	
<p>The SS Pedernales was a British oil tanker that came to Aruba to collect oil at the oil refinery situated at the southwest side of the island, namely Lago Oil refinery. World War II was beneficial for Aruba as the war had dissipated the oil industry in Europe. However, this was not appreciated by the Germans who attacked three ships in 1942 as part of a larger organized attack that killed thousands of soldiers and sank hundreds of ships. The attack on the SS Pedernales resulted in the death of 8 people with 18 survivors (Alofs and Merckies, 2001, p. 50; Hochstuhl, 2001; Oorlogs Bronnen, thema: Operation Paukenschlag). The ship was situated at Palm Beach when it was torpedoed by a German Reich Navy U-Boat 156. The torpedo caused significant damage to the ship with sections of the ship being charred, twisted, and crumpled. However, the ship remained afloat with large sections breaking off. Large pieces of the ship is present strewn across coral reefs, namely cabins, washbasins, and pipelines systems. The undamaged parts of the ship were then cut off and welded into a smaller vessel. The SS Pedernales now resides at a maximum depth of 8 – 9 meters, with an average visibility of 28 – 30 meters. The shipwreck has now become an artificial reef that houses an abundance of marine life (Wrecksite).</p>	
<b>Description</b>	
Name: SS Pedernales	Length: 108.2 meters
Type: Steam tanker	Width: 18.4 meters
Nationality: British	Height: 5.1 meters
Owner:	Tonnage: 3945 tons
Built/ Commissioning: 1938	Power: 318 n.h.p.
Demise: 1942	Speed: 10 knots

<b>Status</b>
<p>The SS Pedernales is going through mechanical, biological, chemical, and human threat factors. Hurricanes and tropical storms are causing the displacement of archaeological remains and weakening of the coral reefs present on the ship. Wood materials are present at the sight which in turn are undergoing biological deterioration while a majority of the ship itself is in a continuous state of metal erosion. As last, human activities are causing significant damage through fishing, more specifically the fishing methods used are to directly anchor their fishing vessels to the shipwreck itself. This causes parts of the shipwreck to break off. In addition, the SS Pedernales is a popular dive site, in turn making it susceptible to looting and treasure hunting.</p>
<b>References</b>
<ul style="list-style-type: none"> <li>▪ Alofs, L., Merkies, L. (1990). Ken ta Arubiano. Sociale Integratie en Natievorming op Aruba. <i>Antillen Working Papers</i> 15.</li> <li>▪ Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.</li> <li>▪ Headquarters Antilles Air Command. (2001). <i>German U-Boat 156 Brought War to Aruba February 16, 1942</i>. Publication: 60<sup>th</sup> Anniversary Edition, Aruba Scholarship.</li> <li>▪ Oorlogs Bronnen, thema: Operation Paukenschlag: <a href="https://www.oorlogOorlogsBronnen.nl/thema/Operatie%20Paukenschlag">https://www.oorlogOorlogsBronnen.nl/thema/Operatie%20Paukenschlag</a>.</li> <li>▪ Wrecksite: <a href="https://www.wrecksite.eu/chartDetails.aspx?1158">https://www.wrecksite.eu/chartDetails.aspx?1158</a>.</li> </ul>



## Photographs



SS Oranjestad (1942)	
<b>Type</b>	Shipwreck
<b>Location</b>	Sero Colorado
<b>Period</b>	Historic period – Industrial period 1942
<b>Variety</b>	British oil tanker
<b>Owner</b>	Lago Shipping Co Ltd (Esso), London
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	None
<b>History</b>	
<p>The SS Oranjestad was a British oil tanker built in 1927 and functioned up until 1942 when it was attacked by the Germans. The SS Oranjestad was anchored off the coral reefs in front of Sero Colorado when a German Reich Navy U-boat 156 fired a torpedo and the oil tanker subsequently sank killing 15 people with ten surviving (Hochstuhl, 2001). The SS Oranjestad was one of three ships anchored in the waters of Aruba that were attacked in 1942 as part of a German organized attack called “Operation Paukenschlag” that sank hundreds of ships and caused thousands of soldiers to die (Alofs and Merckies, 2001, p. 50; Oorlogs Bronnen, thema: Operation Paukenschlag).</p>	
<b>Description</b>	
Name: SS Oranjestad	Length LPP: 93.2 meters
Type: Steam Tanker	Beam: 15.3 meters
Nationality: British	Tonnage: 2396 tons
Owner: Lago Shipping Co Ltd (Esso), London	Position: 12.25N, 69.55W
Built/ Commissioning: 1927	
Demise: 1942	
<b>Status</b>	
<p>The SS Oranjestad now resides at a depth of over 40 meters off the coast of Sero Colorado in the vicinity of a coral reefs. It is subjected to mechanical threats, namely tsunami's and hurricanes which cause damage to the ship, in addition to chemical and biological threats. Despite the depth, divers have been known to visit the wreck making it susceptible to looting or treasure hunting. However, no survey has been conducted to document the preservation status of the shipwreck.</p>	

## References

- Alofs, L., Merckies, L. (1990). Ken ta Arubiano. Sociale Integratie en Natievorming op Aruba. *Antillen Working Papers* 15.
- Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.
- Headquarters Antilles Air Command. (2001). *German U-Boat 156 Brought War to Aruba February 16, 1942*. Publication: 60<sup>th</sup> Anniversary Edition, Aruba Scholarship.
- Oorlogs Bronnen, thema: Operation Paukenschlag: <https://www.oorlogOorlogs Bronnen, thema: Operation Paukenschlagsbronnen.nl/thema/Operatie%20Paukenschlag>.

## Photographs

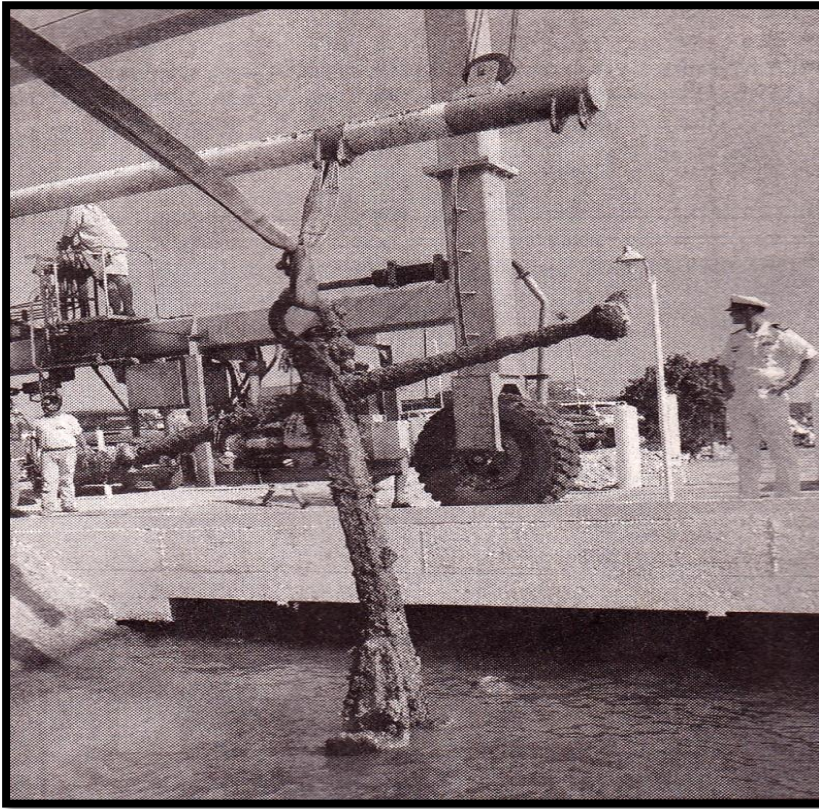


SS Arkansas (1942)	
<b>Type</b>	Shipwreck
<b>Location</b>	Eagle pier
<b>Period</b>	Historic period – Industrial period 1942
<b>Variety</b>	American oil tanker
<b>Owner</b>	Texaco
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	None
<b>History</b>	
<p>The SS Arkansas was an American oil tanker that was anchored at Eagle Pier when it was attacked early morning of February 16<sup>th</sup> 1942. A German U-156 fired two torpedoes at the bow of the ship. However, both torpedoes missed the SS Arkansas and this led to a third torpedo being fired, which ultimately hit the starboard side creating a hole in the region in front of the midship. However, the SS Arkansas did not contain oil on board at the moment of impact and the torpedo caused a small fire and the tanker stayed afloat (The History of Aruba shipwrecks 1939 – 2000: Antilla to Star Gerren). The attack on the SS Arkansas formed part of a larger attack organized by the Germans initiated due to the success of the Lago Oil Refinery. During World War II, the Germans organized an attack called “Operation Paukenschlag” that took place in 1942, which led to the sinking of hundreds of ships and the death of thousands of soldiers (Alofs and Merckies, 2001, p. 50; Oorlogs Bronnen, thema: Operation Paukenschlag).</p> <p>Three anchors were found at Eagle Beach which are speculated to be from the SS Arkansas by members of the SS Oranjestad Memorial Committee. One of the three anchors was then taken out and given to the Marine Base at Aruba and the members of the SS Oranjestad Memorial Committee. The remaining two anchors were left untouched. However, there are no data as to which vessel they belong to or the age thereof (Amigo di Aruba, 2009; Aruba Today, 2010).</p>	
<b>Description</b>	
Tonnage: 6452 tons	

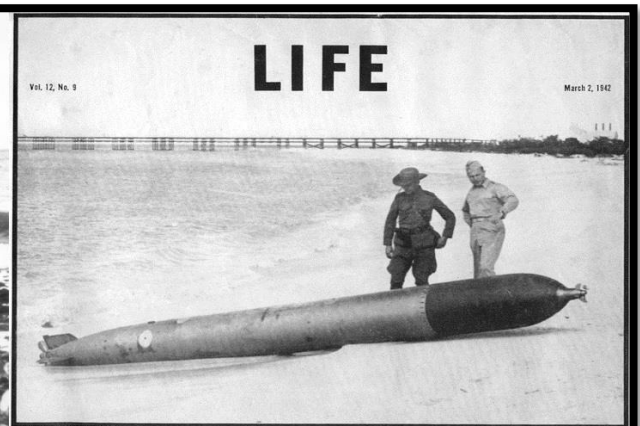
<b>Status</b>
The SS Arkansas did not sink as a ship but was attacked and had subsequently lost its anchors and presumable ship materials, which are now residing under and on the seabed. However, a survey needs to be conducted to assess the status of the underwater archaeological remains.
<b>References</b>
<ul style="list-style-type: none"> <li>▪ Alofs, L., Merckies, L. (1990). Ken ta Arubiano. Sociale Integratie en Natievorming op Aruba. <i>Antillen Working Papers</i> 15.</li> <li>▪ Files on hand, National Archaeological Museum Aruba, Oranjestad, Aruba.</li> <li>▪ The History of Aruba shipwrecks 1939 – 2000: Antilla to Star Gerren:  <a href="https://willemsubmerged.wordpress.com/2009/01/13/pedernales-the-phoenix-of-aruba/">https://willemsubmerged.wordpress.com/2009/01/13/pedernales-the-phoenix-of-aruba/</a>.</li> <li>▪ Oorlogs Bronnen, thema: Operation Paukenschlag: <a href="https://www.oorlogOorlogs Bronnen, thema: Operation Paukenschlagsbronnen.nl/thema/Operatie%20Paukenschlag">https://www.oorlogOorlogs Bronnen, thema: Operation Paukenschlagsbronnen.nl/thema/Operatie%20Paukenschlag</a>.</li> </ul>



## Photographs



(NY3-Feb.34)TORPEDOED TANKER AND UNEXPLODED MISSILE--A DUTCH MARINE STANDS GUARD NEAR AN UNEXPLODED TORPEDO ON THE BEACH AT ARUSA, DUTCH WEST INDIES, FEB. 16, WHILE TUGS TOW BACK TO PORT A BRITISH TANKER WHICH WAS STRUCK BY ANOTHER TORPEDO DURING A SUBMARINE RAID ON SHIP-PIING IN THE AREA. THE BEACHED TORPEDO LATER EXPLODED WHILE BEING DISMANTLED, KILLING FOUR MARINES AND INJURING THREE OTHER PERSONS. (AP Wirephoto)(J083185000r)1942.



DUTCH AND AMERICAN OFFICERS EXAMINE 14-IN. TORPEDO SHOT UP ON CARIBBEAN BEACH OF ARUSA BY NAZI U-BOAT. SOON AFTERWARD IT EXPLODED, KILLING FOUR MEN  
**NOW THE U.S. MUST FIGHT FOR ITS LIFE**

Cross of Iron Pipes (1963)	
<b>Type</b>	Religious symbol
<b>Location</b>	Baby Beach
<b>Period</b>	Historic period – Industrial period 1963
<b>Variety</b>	Metal cross
<b>Status</b>	In situ
<b>Protection</b>	Not protected Pending the ratification of the UNESCO 2001 convention
<b>Process step</b>	None
<b>History</b>	
A statue of Christi was installed in an underwater grotto off the coast of Italy which was designed to protect people going to sea. This in turn inspired Joe van Ogtrop and Tres Dunlap to install a cross in the summer of 1963 in the reef of Baby Beach in front of Esso Club in San Nicolas. It was installed as a religious symbol to protect swimmers, boaters, and divers from the perils of the sea.	
<b>Description</b>	
The cross was created from cast iron pipe manufactured within the refinery. It consists of 6 pieces which were put together underwater. The plate of the base is 60 centimeters wide and 60 centimeters wide. Four smaller pipes circa 60 centimeters long are bolted to the base to give it more stability.	
<b>Status</b>	
Based on the photographic evidence and the materials the cross is made out of, it is undergoing fast rusting due to being situated in salt water.	
<b>References</b>	
<ul style="list-style-type: none"> <li>Lago Spearfishing Society: <a href="https://www.lago-colony.com/SPEARFISHING_ASSOC/CROSS_ON_DOCK_STORY.htm">https://www.lago-colony.com/SPEARFISHING_ASSOC/CROSS_ON_DOCK_STORY.htm</a>.</li> </ul>	

## Photographs

Cross Installed Off The Esso Club In 1963 ...




Submitted by: John "Joe" Van Ogtrop

Left to right: Dick Van Ogtrop, Tres Dunlap, Steve Fremgen (partially hidden), Pat Van Ogtrop, Jill Hochstuhl, unknown man, Patsy Schindler, and holding the cross, Joe Van Ogtrop.






## Future underwater archaeological resources

<b>Colombo</b>	
<b>Type</b>	Shipwreck
<b>Location</b>	San Nicolaas
<b>Depth</b>	Unknown
<b>Period</b>	Industrial period 1976
<b>Variety</b>	Saling ship
<b>Status</b>	In situ
<b>Protection</b>	Not protected as it is under 50 years old.
<b>Process step</b>	None
<b>History and description</b>	
Colombo was a yacht built in 1976 and presumably sank the same year. However, very little information is known about this shipwreck.	
<b>References</b>	Wrecksite – Nederlandse Antillen Aruba: <a href="https://www.wrecksite.eu/chartDetails.aspx?1158">https://www.wrecksite.eu/chartDetails.aspx?1158</a> .



Jane Sea	
Type	Shipwreck
Location	Barcadera harbor
Depth	20 – 28 meters
Period	Modern period 1988
Variety	British cargo bulk
Status	In situ
Protection	Not protected as it is under 50 years old.
Process step	None
<b>History and description</b>	
Jane Sea or Jane C was a bulk carrier measuring 57 meters long built in the Netherlands. The ship served as a shipping cargo from 1959 – 1984 up until it developed engine failure and was subsequently deserted. It was scuttled to the vicinity south of Barcadera harbor in 1988.	
References	The History of Aruba Shipwrecks 1939 – 2000: Antilla to Star Gerren: <a href="https://willemsubmerged.wordpress.com/2008/05/18/a-closer-look-at-the-jane-sea/">https://willemsubmerged.wordpress.com/2008/05/18/a-closer-look-at-the-jane-sea/</a> .
<b>Photographs</b>	
  	







<b>Bali Barge wreck</b>	
<b>Type</b>	Shipwreck
<b>Location</b>	Oranjestad harbor
<b>Depth</b>	28 – 43 meters
<b>Period</b>	Industrial/Modern period 1980's
<b>Variety</b>	Barge
<b>Status</b>	In situ
<b>Protection</b>	Not protected as it is under 50 years old.
<b>Process step</b>	None
<b>History and description</b>	
Bali was a restaurant in the 1980's situated in the harbor of Oranjestad. The Bali barge wreck was used as the floor for the Bali Restaurant in the Renaissance Marina.	
<b>References</b>	JADS Dive Center Aruba: <a href="https://jadsaruba.com/scuba/dive-sites/">https://jadsaruba.com/scuba/dive-sites/</a> .
<b>Photographs</b>	
 	



Morning star	
Type	Shipwreck
Location	Barcadera
Depth	28 – 37 meters
Period	Industrial/Modern period 1980's
Variety	Freighter
Status	In situ
Protection	Not protected as it is under 50 years old.
Process step	None
History and description	
The Morning star is a freighter that is currently situated next to the “Mi Dushi” wreckage near Barcadera. This freighter had its middle hollowed out and subsequently sunk in order to serve as a touristic dive site.	
References	JADS Dive Center Aruba: <a href="https://jadsaruba.com/scuba/dive-sites/">https://jadsaruba.com/scuba/dive-sites/</a> .
Photographs	
	






<b>Topaz</b>	
<b>Type</b>	Shipwreck
<b>Location</b>	Renaissance and Barcadera
<b>Depth</b>	37 – 47 meters
<b>Period</b>	Modern period 1980's/1990's
<b>Variety</b>	Metal boat
<b>Status</b>	In situ
<b>Protection</b>	Not protected as it is under 50 years old.
<b>Process step</b>	None
<b>History and description</b>	
The Topaz was wrecked between the reefs situated between the Renaissance and Barcadera as a dive site for tourists and locals with its engine situated next to the shipwreck.	
<b>References</b>	JADS Dive Center Aruba: <a href="https://jadsaruba.com/scuba/dive-sites/">https://jadsaruba.com/scuba/dive-sites/</a> .
<b>Photographs</b>	
 	

<b>Debbie II/Coralshell</b>	
<b>Type</b>	Shipwreck
<b>Location</b>	Palm Beach/Malmok
<b>Depth</b>	21 meters
<b>Period</b>	Modern period 1991
<b>Variety</b>	Dutch barge/Lighter
<b>Status</b>	In situ
<b>Protection</b>	Not protected as it is under 50 years old.
<b>Process step</b>	None
<b>History and description</b>	
<p>Debbie II/Coralshell was built in 1961 and served as a barge until 1981 when it could no longer keep up with the demands of the oil trade and the vessel was subsequently replaced. Debbie II/Coralshell was then shuttled to the dry dock situated at the Barcadera harbor and was welded shut to serve as a windbreaker for the dock until 1991. It was then scuttled to in front of the high-rise hotels of Palm Beach at a depth of 21 meters to become a dive site.</p>	
<b>References</b>	Wrecksite – Nederlandse Antillen Aruba: <a href="https://www.wrecksite.eu/chartDetails.aspx?1158">https://www.wrecksite.eu/chartDetails.aspx?1158</a>
<b>Photographs</b>	
 	

Tugboat shipwreck	
Type	Shipwreck
Location	Oranjestad
Depth	24 meters
Period	Modern period 1990's
Variety	Tugboat
Status	In situ
Protection	Not protected as it is under 50 years old.
Process step	None
History and description	
A tugboat was sunk in the 1990's in a region surrounded by a gentle reef slope covered in coral growth situated in Oranjestad, making it a good dive location.	
References	Dive Buddy: <a href="http://www.divebuddy.com/divesite/5096/tugboat-wreck-aruba/">http://www.divebuddy.com/divesite/5096/tugboat-wreck-aruba/</a> .
Photographs	
 	

Baboo	
Type	Shipwreck
Location	Malmok
Depth	2 – 3 meters
Period	Modern period 1990's
Variety	Tugboat
Status	In situ
Protection	Not protected as it is under 50 years old.
Process step	None
History and description	
Baboo was sunk in the waters of Malmok in the 1990's in order to create an artificial reef. However, after a hurricane passed in 1999, the wreckage resurfaced and now resides in shallow waters close to the shore, namely circa 50 meters from the shore.	
References	Dijkhoff, R. A. C. F. (2021). <i>Onderwater Cultureel Erfgoed sites Aruba</i> . Werkdocument National Archaeological Museum of Aruba. Personal communication: Harold Kelly, 2021.
Photographs	
 	

<b>Douglas DC-3 Airplane</b>	
<b>Type</b>	Airplane wreck
<b>Location</b>	Renaissance
<b>Depth</b>	13 – 24 meters
<b>Period</b>	Modern period 1999
<b>Variety</b>	Airplane
<b>Status</b>	In situ
<b>Protection</b>	Not protected as it is under 50 years old.
<b>Process step</b>	None
<b>History and description</b>	
<p>The Douglas was seized at the end of the 1990's for drug possession and transportation. Afterwards it was handed over to the association of divers on Aruba to create an artificial reef. It was damaged and split into two with scattered remains in the vicinity after hurricane Lenny passed in the surrounding region of Aruba. The bulk of the airplane resides in front of Renaissance at Sonesta island.</p>	
<b>References</b>	<p>Wrecksite – Nederlandse Antillen Aruba:  <a href="https://www.wrecksite.eu/wreck.aspx?225060">https://www.wrecksite.eu/wreck.aspx?225060</a>.  <a href="https://www.wrecksite.eu/imgBrowser.aspx?51199">https://www.wrecksite.eu/imgBrowser.aspx?51199</a>  SCUBA:  <a href="https://www.scuba.com/blog/scuba-dive-destinations/dive-two-unique-airplane-wrecks-in-aruba/">https://www.scuba.com/blog/scuba-dive-destinations/dive-two-unique-airplane-wrecks-in-aruba/</a></p>
<b>Photographs</b>	
	

<b>Santa Maria/ Star Gerren</b>	
<b>Type</b>	Shipwreck
<b>Location</b>	Palm Beach
<b>Depth</b>	21 meters
<b>Period</b>	Modern period 2000
<b>Variety</b>	Belize cargo ship
<b>Status</b>	In situ
<b>Protection</b>	Not protected as it is under 50 years old.
<b>Process step</b>	None
<b>History and description</b>	
<p>Santa Maria was built in 1965 at J. L. Meyer Shipyard in Papenburg Germany. It measured 73 meters long and weighed 499 tons. It functioned as a cargo ship between 1965 – 1994 and exchanged ownership four times, until it was sold in 1994 to Valeron Corporation N. V. in Curaçao, and was renamed Star Gerren. On July 12<sup>th</sup> 1996, the Santa Maria/Star Gerren experienced engine failure and was subsequently towed to Barcadera harbor and abandoned. The cargo ship remained at the Barcadera harbor until 2000 when it became an environmental hazard due to a leakage on the ship. It was then covered into a dive site and sunk on August 31<sup>st</sup> 2000 in front of the high rise hotels in the area of Palm Beach.</p>	
<b>References</b>	<p>The history of Aruba shipwrecks 1939 – 2000: Antilla to Star Gerren:</p> <p><a href="https://willemsubmerged.wordpress.com/tag/wreck/">https://willemsubmerged.wordpress.com/tag/wreck/</a></p>
<b>Photographs</b>	
 	



## Airplane and auto wrecks

Type	Site
Location	De Palm Island
Depth	Unknown
Period	Modern period 2000's
Variety	Cars, airplanes, furniture
Status	In situ
Protection	Not protected as it is under 50 years old.
Process step	None

### History and description

In the early 2000's, multiple cars, furniture namely a café table with chairs, and an airplane were sunk on purpose to be a "Sea TREK tour" off the coast of the De Palm Island.

References	Sub Sea Systems: <a href="https://subseasystems.blogspot.com/2014/01/sea-trek-at-de-palm-in-aruba-take.html">https://subseasystems.blogspot.com/2014/01/sea-trek-at-de-palm-in-aruba-take.html</a> .
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### Photographs





## Airplane S-11

Type	Airplane wreck
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Location	Renaissance
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Depth	12 – 25 meters
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Period	Modern period 2004
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Variety	Airplane
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Status	In situ
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Protection	Not protected as it is under 50 years old.
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Process step	None
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### History and description


An airplane, a S-11 was sunk in 2004 in front of Renaissance at the Sonesta island with the intended purpose to become an artificial reef. The airplane now resides at a depth between 12 – 25 meters and is completely intact with the exception of the nose and is open to make it accessible for divers.


References	Divers guide:
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	<a href="https://www.divers-guide.com/en/ys-11-airplane">https://www.divers-guide.com/en/ys-11-airplane</a> .
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### Photographs



Kappel tugboat	
Type	Shipwreck
Location	Mangel Halto
Depth	12 – 15 meters
Period	Modern period 2010
Variety	Tugboat
Status	In situ
Protection	Not protected as it is under 50 years old.
Process step	None
History and description	
Kappel is a small tugboat that was sunk on November 9 <sup>th</sup> 2010. The Kappel is situated in one of Aruba's top snorkel location, and is a relatively new wreckage and the corals in the surrounding environment are just starting to settle onto the wreck leading to a smaller variety of marine life living around the wreckage.	
References	JADS Dive Center Aruba: <a href="https://jadsaruba.com/">https://jadsaruba.com/</a> . Snorkel around the world: <a href="https://snorkelaroundtheworld.com/2017/11/aruba-shipwreck-snorkeling/">https://snorkelaroundtheworld.com/2017/11/aruba-shipwreck-snorkeling/</a>
Photographs	
	

Mi Dushi	
Type	Shipwreck
Location	Barcadera
Depth	28 – 37 meters
Period	Modern period 2015
Variety	Schooner
Status	In situ
Protection	Not protected as it is under 50 years old.
Process step	None
History and description	
A schooner was sunk in 2015 in the vicinity of Barcadera next to the freighter Morning Star. Mi Dushi serves as a dive site for tourists and locals alike in addition to being a submarine lookout location.	
References	JADS Dive Center Aruba: <a href="https://jadsaruba.com/">https://jadsaruba.com/</a> .
Photographs	
	

Lockheed Lodestar	
Type	Airplane wreck
Location	Arashi
Depth	7 meters
Period	Modern period Unknown
Variety	Airplane
Status	In situ
Protection	Not protected as it is under 50 years old.
Process step	None
History and description	
The airplane wreckage Lockheed Lodestar is situated at the Arashi Reef is surrounded by coral formations, parrot- and angelfish, making it a good diving location.	
References	Aruba Travel Guide: <a href="http://www.aruba-travelguide.com/discover/activities/scuba-diving/dive-sites-spots.html">http://www.aruba-travelguide.com/discover/activities/scuba-diving/dive-sites-spots.html</a> .
Photographs	
 A photograph of a Lockheed Lodestar airplane, a twin-engine propeller aircraft, on a runway. The plane is white with red and blue stripes. It is parked on a grassy field with a crowd of people and other aircraft in the background. The sky is clear and blue.	